

REMARKS

The drawings have been objected to for the reasons stated in section 5 bridging pages 2 and 3 of the Office Action. In addition, the specification and claims have been objected to for the reason stated in sections 7-9 on pages 3 and 4 of the Office Action.

By this Amendment, and separately submitted Letter to the Office Draftsman, the entire application has been revised so as to now clearly meet all of the statutory requirements of 35 U.S.C. §112 as to form.

It is noted that with regard to Figs. 1 and 3, the Examiner has stated that they should be labeled "prior art" since "only that which is old is shown".

However, the term "prior art" is clearly defined in 35 U.S.C. §§102 and 103 and contains numerous exceptions such that "that which is old" may or may not be "prior art" within the meaning of 35 U.S.C. §§102 and 103.

Accordingly, Figs. 1 and 3 have not been labeled "prior art" but rather have been labeled "related art" so as to clearly distinguish these drawing figures from the drawings figures of the present invention.

Claims 1 and 2 have been rejected under 35 U.S.C. §102 as anticipated by Jones for reasons

stated in sections 11-13 on page 5 of the Office Action and claims 3-6 have been rejected 35 U.S.C. §103 as obvious over Jones for the reasons stated in sections 15-19 on pages 6-8 of the Office Action.

By this Amendment, claims 1-6 have been revised so as to improve their clarity and it is submitted that claims 1-6 define over Jones for the following reasons:

In RAID structure of level 5, data is striped across in each drive array, and parity data is distributed and stored in all drives in order to remove bottleneck phenomenon when data is written. In this RAID structure, since the data written in all drives must be read in order to calculate the parity when the data is written, its speed is slower.

In the present invention, only a part of the most outer region of the disk drive is equipped with a region where parity information can be stored in order to enhance the parity information access speed when data is written. Additionally, in the present invention, a cache memory where parity information is temporally stored is connected to each drive, in order to remove an inefficient problem that data written in all drives should be read out so as to calculate the parity when the data is written. Accordingly, in the present invention, if desired parity information is hit in a cache connected to each drive, there is not much need for accessing the disk drive.

Contrary to the present invention, Jones '660 neither discloses nor teaches that data and parity information are written in the same disk drive and that only parity information is written in a cache connected to each disk drive so as to enhance the hit possibility of parity information. In other words, in Jones '660, a disk drive where only parity information is written is provided with and

necessary parity information is read out by searching said disk drive when data is written. Therefore, Jones '660 can not achieve the effect of the present invention.

Turning to the language of the claims, it is submitted that while Jones may illustrate a structure which superficially bears similarities to the structure of the apparatus of the present invention, it is submitted that Jones does not teach or suggest the specifically recited features of claims 1 and 2. That is, while Jones does illustrate a plurality of memory devices and a plurality of caches and a controller, Jones does not teach or suggest the plurality of memory devices and a cache and the controller having the specifically recited features of claim 1.

Furthermore, as to claim 2, the cache of Jones noted by the Examiner does not correspond to determining whether data recovery information is stored in any cache of said plurality of caches.

As to claim 3, the Examiner admits that Jones does not disclose that the information needed for data recovery being stored sequentially from the most outer cylinder on the recording medium.

The Examiner then takes "official notice" that such an arrangement would have been well known and desirable to one of ordinary skill in the art.

Applicant disagrees with the Examiner's allegation in that the Examiner has made unsupported statements in section 16 under the guise of "official notice". If this recited feature is

so well know, then the Examiner should have been able to easily locate the prior art disclosing such a feature.

With regards to claims 4 and 5, it is submitted that they define over Jones in view of their dependency on claim 3.

As to claim 6, the Examiner correctly admits that Jones does not disclose a disk drive stores data and parity in the preferred embodiment. And then argues that it would be obvious to modify Jones to produce a system having the recited features of claim 6.

Applicant disagrees with the Examiner's allegation in that there is no teaching or suggestion or incentive in Jones supporting such a modification but rather the Examiner has used hindsight based on the teachings of the present application to modify Jones to produce a system which reportedly meets the recited limitations of claim 6. Even assuming *arguendo* that Jones teaches that distributing the parity across the disks as in RAID-5 improve write throughput, this does not result in the conclusion that it would be obvious to store data and parity on each disk drive.

Accordingly, it is submitted that claims 1-6 define over the cited art and should therefore now be in a condition suitable for allowance.

Additional references were cited by the Examiner but not utilized in the rejection of the


claims. As recognized by the Examiner, these references fail to teach or suggest the specifically recited features of the present invention and accordingly, no further comment on these references is necessary.

No other issues remaining, reconsideration and favorable action upon all of the claims now present in the application is respectfully requested. Should any questions remain unresolved, the Examiner is requested to telephone Applicant's undersigned attorney.

A Letter to the Office Draftsman accompanies this response. Indication in subsequent Office correspondence of the acceptance of the drawing corrections proposed in the Letter is requested to enable Applicant to timely arrange for the corrections to be made prior to the date for payment of any issue fee.

A fee of \$380.00 is incurred by filing of a petition for two month extension of time. Applicant's check drawn to the order of the Commissioner accompanies this. Should the check become lost or detached from the file, the Commissioner is authorized to charge Deposit Account No. 02-4943 and advise the undersigned attorney accordingly. Also, should the enclosed check be deemed to be deficient or excessive in payment, the Commissioner is authorized to charge or credit our deposit account and notify the undersigned attorney of any such transaction.

Respectfully submitted,


Robert E. Bushnell
Attorney for the Applicant
Registration No.: 27,774

1522 "K" Street N.W., Suite 300
Washington, D.C. 20005
(202) 638-5740

Folio: P54508
Date: 9/20/99
I.D.: REB/HZ